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TECHNICAL ASSISTANCE TO A
FARMING SYSTEM PROJECT IN ECUADOR,
AUGUST 20 - 24, 1984

TRAINING & ADVICE ON
COMPUTER-ASSISTED DATA MANAGEMENT
FOR FOOD PRODUCTION & CONSUMPTION LINKA

by

Gary H. Vagnette
Micro-Computer Specialist

AUGUST 1984

United States Department of Agriculture
Office of International Cooperation and Development



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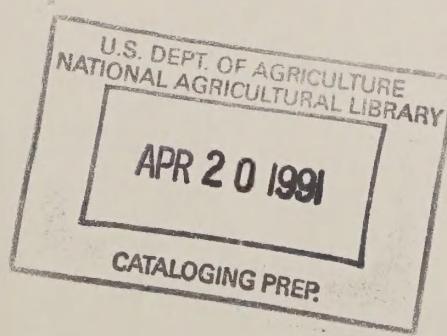
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August 1984

Nutrition Economics Group
Technical Assistance Division
Office of International Cooperation and Development
United States Department of Agriculture

This report was prepared for the Nutrition Economics Group under a PASA entitled Nutrition: Scientific Technical and Planning Support (Ecuador) with the Office of Nutrition, Bureau for Science and Technology, Agency for International Development



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CATALOGUE NUMBER

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EXECUTIVE SUMMARY

The author was contracted to provide training and advice and computer programming for the AID(Quito)/INIAP Farming Systems Research Project in Ecuador from August 20 through August 24, 1984. The author assisted the USDA/OICD anthropologist/food economist in providing technical assistance to strengthen the research design to include consumption/nutrition considerations and augment the national capability to conduct similar food production/consumption research activities.

FORWARD

The author was contracted under a PASA between USDA/OICD and AID to provide training, advice and computer programming for the AID/INIAP Farming Systems Project (IDAPA) in Ecuador. This report is part of technical assistance to USAID/Quito from AID/W Office of Nutrition as follow on to the "Food Production/Consumption Workshop" held in January 1984 in Quito, Ecuador. From August 18 through August 24, the author worked with Dr. Charlotte Miller on these activities. Special thanks are due to Ing. Germán Diener who provided an introduction to the INIAP computer system and the software packages already available there. Also, acknowledgements are due to Dr. Miller for introducing him to the key persons involved in the activity and providing orientation and leadership during the technical assistance. Darell McIntyre, USAID/Quito, was particularly helpful and cooperative in supporting this activity and expediting dealings with customs on computer imports. Maura Mack, AID/W Office of Nutrition, was very thorough and patient in explaining the activity and facilitating contacts between INIAP and the author, even before the official beginning of the technical assistance.

INTRODUCTION

In January 1984, a "Food Consumption Production Workshop" was held in Quito, Ecuador as part of the nutrition technical assistance to the AID/INIAP farming systems research project (IDAPA). In that workshop several future needs were identified, among them were:

1. The necessity of selecting and gathering data in the target area of rural Salcedo, Ecuador (designing and implementing a pre-test survey instrument).
2. Computer support for the expedition of the analysis of the resultant data.

A pre-test consumption/nutrition survey project was scheduled for August 1984.

The author assisted in the August survey project in the following areas:

- the procurement of microcomputer hardware and software in the U.S.A.
- assistance in the August meetings in Quito wherein the pre-test survey was evaluated
- training of the workshop participants in the potential of the microcomputer in the evaluation of survey data
- creation of a data base from the survey instruments.
- advisory activities concerning the selection of microcomputer hardware and software
- advisory activities concerning the procurement of microcomputer hardware and software.

The author also met with Darell McIntyre of USAID/Quito to give advice on the capacity and use of the IBM-PC/XT.

TRAINING ACTIVITIES

At the point in which the author entered into the August activities in Quito a pre-test survey instrument had been developed and a survey had been conducted in rural Salcedo including data from eighteen families in the east, west and central subareas of the Integrated Rural Development Project area.

A tentative revision of the survey instrument had been made and the author assisted in the further refinement of the instrument during the two days workshop.

During the morning of the first day the group of thirteen participants discussed the instruments, the data that had been gathered, its relevance to problems identified and future data needs. The author provided general information regarding the limits of the microcomputer relative to the amount and type of data collected.

The classroom activity took the form of roundtable discussion in plenary session. The author and Dr. Charlotte Miller did not take direct instructional or leadership roles, but rather strove to facilitate the integration of the participants into a functional working group. This task was challenging due to the fact that various disciplines (nutritionists, computer technicians, agricultural economists, agronomists, and agricultural engineers) and from both the capital and two project areas of the country, Imbabura and Salcedo.

In the afternoon of the first day the group was divided into two halves to facilitate more informal and productive communication. The author stayed with one half of the group while Dr. Miller stayed with the other half. The author's group spent the afternoon discussing and designing the tables that would be the necessary result of the analysis of the data and worked backwards from that point to specific design considerations of the survey instrument. The author interjected advice on the choice of microcomputer software to produce the desired tables, focusing on the potential of dBASE II and ISIS software.

During the morning of the second day the two groups were given demonstrations of various software packages for the APPLE II+ computer. Ing. Germán Diener, Dr. Miller and the author spoke to both groups on the components and the use of the microcomputer system in general and demonstrated them the methods of input, the dynamics of interaction and the forms of the output of dBASE II, ISIS, NUTRIONIST II, VISI-DEX, and VISI-PLOT/TREND software.

During the afternoon of the second (final) day the group once again met in plenary session to evaluate their experience. In retrospect, the author notes several points of satisfaction in the results of these two days of classroom activities. Based on observations made by the author during three years of employment under the Ministry of Education of Ecuador, he understands that inter-disciplinary, inter-departmental communication and cooperation is not the norm in the country. The workshop proved a great exception to those observations. As a result of the workshop, a good working relationship developed among the participants. The author assumes that based on the experiences shared during these two days, continuing contacts will be maintained among all concerned.

DATA BASE CREATION

During the evening before the first day of the sessions the author assisted Dr. Miller in the creation of a data base using the information in the eighteen pre-test survey forms. He produced this data base and a demonstration report using dBASE II software in the APPLE II+ computer at INIAP offices. The report compared sources of vegetable protein against sources of animal protein in the consumption of the eighteen families surveyed. The report was given to the workshop participants in the plenary session on the first morning as a demonstration of the software capacity and the speed of analysis.

During the evening of the first day of the workshop the author created a variation of the data base, again from information on the survey forms, and produced a report using dBASE II demonstrating the percent of consumption/production of the several varieties of oca (an Andean tuber), barley and broad beans contained in the survey. This report was given to the participants during the computer demonstrations on the second day.

ADVISORY ACTIVITIES ON HARDWARE/SOFTWARE USE

The author spoke to Ing. Germán Diener and Darell McIntyre about the uses and limits of the APPLE II+ and the IBM-PC/XT computers and their respective software packages.

He advised Ing. Diener that the use of dBASE II software was the best present method of storing the raw data from survey forms and that VISI-PLOT software was an adequate and flexible method of obtaining graphic representation of the data and that ISIS statistical software was the best present method of displaying statistical information from the survey. He advised however, that the IBM-PC had eclipsed the APPLE II+ in popularity and power. Therefore, he predicted that in the future (and even now) the newer and more powerful and flexible software would be written for the IBM due to the popular acceptance and standardization of that machine and its "clones".

He advised McIntyre that the IBM-XT was a more powerful machine than the IBM-PC and that its use of a hard disk drive allowed for more secure use of software and for greater capacity of data storage and speed of data processing.

ADVISORY ACTIVITIES ON HARDWARE/SOFTWARE PROCUREMENT

During the period of August 1 through August 17 the author spent several days procuring hardware and software for this project. Before Maura Mack (AID/Washington) left for Quito (approximately Aug. 1) the author investigated and identified two extensive catalogs of books, hardware, and software for the APPLE II+ computer based on requests from Ing. Germán Diener during a telephone conference between him, Maura Mack and the author. They were "BOOK BYTES" and "THE APPLE BLUE BOOK".

After Maura Mack delivered these catalogs to INIAP in Quito, Ing. Diener made several requests on behalf of INIAP for hardware and software pertinent to this project.

By means of three days of telephone investigation the author located the sources and ordered the software packages MULTIPLE STEPWISE REGRESSION and LINEAR PROGRAMMING which he later delivered to INIAP/QUITO. He also procured a monochrome monitor for INIAP's APPLE II computer and delivered that to Quito. These purchases were covered in reimbursement made by Dr. Miller. The author identified a source for a numeric keypad and an 80 column VIADEX display card for the APPLE which Dr. Miller purchased and delivered. The author obtained and delivered a dBASE II Manual and advanced user's guide and a book of general information concerning the APPLE's CP/M operating system.

CONCLUSIONS AND RECOMMENDATIONS

The author viewed this workshop as a positive contribution to INIAP's on going development of data use techniques, based on the cooperation he witnessed between members of different governmental organizations. He highly recommends that US assistance be continued to reinforce and complete this work, begun in such an unusual spirit of cooperation.

Appendix 1

SCOPE OF WORK

The Contractor will provide training, advice, and computer programming for the AID/INIAP Farming Systems Research Project (IDAPA) in Ecuador. The Contractor will assist the anthropologist/food economist (USDA employee) in providing technical assistance. The technical assistance will expand and strengthen the IDAPA research design to include consumption/nutrition considerations and augment the national capability to conduct similar food production/consumption research activities. The Contractor's responsibilities lie within the realm of his/her professional capabilities as a computer specialist.

Specific tasks are:

1. Assist with training on data use and data processing for Ecuadorian government officials (INIAP, Ministry of Health, and DRI). This will include giving presentations and developing materials on site for the 2-day training session. The substance of the training will emphasize how to take raw survey data and manipulate it with an electronic data base package.
2. Assist in setting up a database for pre-test survey results developed by the anthropologist/food economist.
3. Advise INIAP and AID mission on optimum use of existing hardware and software.
4. Advise INIAP and AID mission on procurement of hardware and software, specifically the capabilities of the IBM/PC-XT.

Appendix 2

ACRONYMS

GOE	Government of Ecuador
INIAP	Instituto Nacional de Investigaciones Agropecuarias
ININMS	Instituto Nacional de Investigaciones Nutricionales y Médico Sociales
IDAPA	Investigaciones y Desarrollo Adaptados a Pequeños Agricultores

FUENTES DE PROTEINA VEGETAL POR FUENTES DE PROTEINA ANIMAL

ENCUESTA PAPAS TRIGO CEBADA MAIZ ARROZ AVENA MANI HABIA ARVEJA ATACOS

ELEMENTS DE GEOTEINANALYSE

COMMITTEE ON EDUCATING CHILDREN IN
THEIR COUNTRY

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Appendix 3: Sample dBASE II Report

Appendix 4

LIST OF CONTACTS

Maura Mack	AID/W
Charlotte Miller	USDA
Darell McIntyre	USAID/Quito
Germán Diener	INIAP
Víctor Hugo Cardoso	INIAP
Jorge Rivadeneira	INIAP



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